

REMARKS

Claims 1-18, 20, 22 and 25 are pending in the application.

Claims 1, 4, 22 and 25 are amended above to more clearly set forth what the Applicant regards as the invention and/or to overcome claim informality issues.

The Abstract is amended above to shorten it to fewer than 150 words.

No new matter has been added to the application by way of these specification and claim amendments.

I. THE ABSTRACT

The examiner objected to the Abstract for including more than 150 words.

The examiner's objection is overcome by amending the Abstract above to shorten it to fewer than 150 words.

II. THE SECTION 101 REJECTION OF CLAIM 25

The examiner rejected claim 25 under Section 101 for lacking utility.

The examiner's rejection is overcome by amending claim 25 to recite a computer program "on a computer readable medium".

III. THE SECTION 112, 2nd PARAGRAPH REJECTION OF CLAIM 4

The examiner rejected claim 4 because of an antecedent basis issue with the term "locations".

The examiner's rejection is overcome by deleting the term "the" where it occurs before the term "locations" on line 2 of claim 4.

IV. THE ANTICIPATION REJECTION

The examiner rejected claims 1, 6-9, 11, 14, 17-18, 20, 22 and 25 for being anticipated by the Madachy article. The rejected claims are novel and patentable at least because Madachy does not disclose one or more of the steps of independent method claims 1 and 22 discussed below.

The method of the present invention, as defined in independent claims 1 and 22, comprises a number of successive steps. The first step – which is not disclosed by Madachy - is

to identify the locations of objects within an image which have specified intensity and size characteristics. (See the section headed “Location of candidate cell nuclei” on pages 5-9 of the present application). The second step of independent claims 1 and 22 - which is also not disclosed by Madachy - is to define respective regions of specified extent within the image around respective said locations (these are the regions of interest (ROI)), from the data within which regions closed contours are subsequently derived. (See specification section titled “Contour selection” on pages 10-14).

The Examiner alleges that the reference to “geometrical measures” in the Abstract of Madachy correspond to the claimed first step of claims 1 and 22. That is not the case however, because there is no disclosure whatsoever in the Madachy Abstract about identifying the *locations* of objects. The Examiner next alleges that the SHAPE section of the Madachy reference discloses the second step of claims 1 and 22. Once again, however, there is no disclosure whatsoever in the cited Madachy section about defining regions of specified extent within the image around specified locations. What actually occurs in Madachy is described in the METHOD section of the Article. According to the METHOD section, the Madachy analysis program uses a pre-specified density threshold and contours are then sought in the thresholded image. There is absolutely no disclosure in Madachy of the independent claim 1 and 22 steps of *first* identifying the *locations* of objects having specified intensity and size characteristics and then defining *respective* (i.e. individual) regions around the *respective* locations within which to seek contours. For these reasons, claims 1, 6-9, 11, 14, 17-18, 20, 22 and 25 are novel over Madachy and, therefore, patentable.

Claims 1, 6-9, 11, 14, 17-18, 20, 22 and 25 are also novel and patentable because Madachy does not disclose a method that produces a *measure of concavity* of the curvature of derived contours as required by claims 1 and 22. (See page 19, lines 12-23 of the present application). The Examiner is correct that the curvature $R(i)$ at points around the contour is mentioned in the SHAPE section of Madachy. Individual values of curvature around the contour as described in Madachy are not themselves a measure of concavity of the contour, however. While Madachy indicates that a set of curvatures is used to derive so-called “bending energy” there is no disclosure of using curvature data to produce a measure of *concavity* of the contour. Indeed, concavity is not mentioned anywhere in Madachy. Therefore, claims 1, 6-9,

11, 14 17-18, 20 and 22 are novel at least because Madachy does not disclose this additional step of independent claims 1 and 22.

V. THE OBVIOUSNESS REJECTION

The examiner rejected claims 2-5, 10 and 12-13 for being obvious over the Madachy article in view of the Netsch article. Claims 2-5, 10 and 12-13 are non-obvious and patentable by virtue of their dependence upon independent claim 1, which is patentable at least for the reasons recited in section IV above.

CONCLUSION

All pending application claims are patentable for the reasons recited above. Favorable reconsideration and allowance of all pending claims, is therefore courteously solicited.

Date: January 17, 2008

By: /A. Blair Hughes/
A. Blair Hughes
Reg. No. 32,901
312-913-2123
hughes@mbhb.com